Changes in the Consumer Price Index in 2002

Expenditure Weight Update

As announced in December 1998, the Bureau of Labor Statistics (BLS) has updated the consumption expenditure weights in the Consumer Price Index for all Urban Consumers (CPI-U) and in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) to the 1999-2000 period, effective with release of data for January 2002. The newer weights replace the 1993-95 weights, which were first used in the index effective with January 1998 data. Additionally, CPI expenditure weights will be updated at two-year intervals subsequent to the 2002 updating. Thus, for example, CPI expenditure weights will be updated to the 2001-02 period effective with release of CPI data for January 2004.

Historically, the introduction of a comprehensive new set of expenditure weights attached to the categories of goods and services in the CPI "market basket" has taken place in the context of the periodic major revisions of the index. Such major revisions have taken place approximately once each decade—in 1940, 1953, 1964, 1978, 1987 and, most recently, in 1998.

The goal in employing more current expenditure weights is to have the CPI reflect, as much as possible, the inflation currently experienced by consumers. More specifically, the use of more current weights will help to ensure that the relative importance of CPI item categories, such as food away from home, college tuition, or medical care services, more accurately reflects how consumers are allocating their spending.

Publication of Overlap CPIs

For the first six months of 2002, BLS will continue to calculate and publish selected CPI-U and CPI-W "overlap" indexes on a not seasonally adjusted basis. These indexes will be compiled using the 1993-95 expenditure pattern that was introduced into the CPI in 1998. Comparison of these index series to the corresponding updated series will enable users of the CPI to observe the effects of the expenditure weight change. The subsequent expenditure updates scheduled in 2004 and every two years thereafter also will be accompanied by the publication of overlap indexes for a six-month period using the previous expenditure pattern.

Publication of CPI for the Phoenix Area

Effective with release of the July 2002 Consumer Price Index (CPI), BLS will initiate publication of consumer price data specific to the Phoenix-Mesa, Arizona, Metropolitan Statistical Area. As with the national CPI and other local area CPIs, data will be published for each of two population groups, that for all urban consumers (CPI-U) and that for urban wage earners and clerical workers (CPI-W). The Phoenix-Mesa CPI will be published on a semi-annual basis with a reference base of December 2001 = 100. The same amount of item detail will be available for Phoenix-Mesa as is presently available for all other areas published on a semi-annual basis.

Change to Published Item Structure

Effective with release of the January 2002 CPI, BLS began publishing an item index for leased cars and trucks. This index series is available monthly at the U.S. City Average area level for both the CPI-U and CPI-W with a December 2001 = 100 reference base.

NOTE ON A NEW, SUPPLEMENTAL INDEX OF CONSUMER PRICE CHANGE

The Bureau of Labor Statistics will begin publishing a consumer price index (CPI) called the Chained Consumer Price Index for All Urban Consumers, effective with release of July data in August 2002. Designated the **C-CPI-U**, the index will supplement the existing indexes already produced by the BLS: the CPI for All Urban Consumers (CPI-U) and the CPI for Urban Wage Earners and Clerical Workers (CPI-W).

The **C-CPI-U** will employ a Tornqvist formula and utilize expenditure data in adjacent time periods in order to reflect the effect of any substitution that consumers make ***across*** item categories in response to changes in relative prices. The new measure, said to be a "superlative" index, is designed to be a closer approximation to a "cost-of-living" index than the present measures. The use of expenditure data for both a base period and the current period in order to average price change ***across*** item categories distinguishes the **C-CPI-U** from the existing CPI measures, which use only a single expenditure base period to compute the price change over time. In 1999, the BLS introduced a geometric mean estimator for averaging prices ***within*** most of the index's item categories in order to approximate the effect of consumers' responses to changes in relative prices ***within*** these item categories. The geometric mean estimator will be used in the **C-CPI-U** in the same item categories in which it is now used in the CPI-U and CPI-W. (See Monthly Labor Review, October 1998, pp. 3-7.)

Expenditure data required for the calculation of the **C-CPI-U** are available only with a time lag. Thus, the **C-CPI-U** will be issued first in preliminary form using the latest available expenditure data at that time and will be subject to two subsequent revisions. Accordingly, at the time of its introduction in August, "final" values of the **C-CPI-U** will be issued for the 12 months of 2000, "interim" values will be issued for the 12 months of 2001, and "initial" values will be issued for January-July of 2002. In February 2003, with release of the January 2003 index, revised interim indexes for the 12 months of 2002 will be published, and the index values for 2001 will be revised and will become final. Then, in February 2004, when the monthly expenditure data from calendar year 2002 become available, **C-CPI-U** indexes for the 12 months of 2002 will be issued in final form and values for the 12 months of 2003 will be revised and issued as interim. The **C-CPI-U** index revisions are expected to be small, but in principle each monthly index could be revised from its previously published level.

BLS previously has calculated superlative indexes on an experimental basis, although these are not comparable to the **C-CPI-U** in all computational details. (See, for example, *Monthly Labor Review*, December 1993, pp. 25-33.) Based on BLS research, the **C-CPI-U** is estimated to increase at an average annual rate of 0.1 to 0.2 percentage point less than the CPI-U.

The **C-CPI-U** will be issued for national averages only and will not be seasonally adjusted. It will employ a December 1999=100 reference base. Data for periods prior to December 1999 will not be calculated. The component series that will be published are listed below:

- All items
  - Food and beverages
    - Food
      - Food at home
      - Food away from home
    - Alcoholic beverages
  - Housing
    - Shelter
    - Fuels and utilities
    - Household furnishings and operations
  - Apparel
  - Transportation
    - Private transportation
    - Public transportation
  - Medical care
    - Medical care commodities
    - Medical care services
  - Recreation
  - Education and communication
    - Education
    - Communication
  - Other goods and services
- Services
- Commodities
  - Durables
  - Nondurables
- All items less food and energy
- Energy

These indexes will be published monthly in the CPI news release and the CPI Detailed Report, and the series will be available electronically at the same site as other CPI data: http://www.bls.gov/cpi/.

For more information on the **C-CPI-U**, write to:

Bureau of Labor Statistics
Division of Consumer Prices and Price Indexes
2 Massachusetts Ave. NE, Room 3130
Washington, DC 20212

Or contact Patrick Jackman or Rob Cage either by telephone at (202) 691-6952 or by electronic mail at Jackman_P@bls.gov or Cage_R@bls.gov .

Facilities for Sensory Impaired

Information from this release will be made available to sensory impaired individuals upon request. Voice phone: 202-691-5200, Federal Relay Services: 1-800-877-8339. For a recorded message of Summary CPI data, call (202) 691-5200.

Brief Explanation of the CPI

The Consumer Price Index (CPI) is a measure of the average change in prices over time in a market basket of goods and services. The Bureau of Labor Statistics publishes CPIs for two population groups: (1) a CPI for All Urban Consumers (CPI-U) which covers approximately 87 percent of the total population and (2) a CPI for Urban Wage Earners and Clerical Workers (CPI-W) which covers 32 percent of the total population. The CPI-U includes, in addition to wage earners and clerical workers, groups such as professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, and retirees and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, and fuels, transportation fares, charges for doctors' and dentists' services, drugs, and other goods and services that people buy for day-to-day living. Prices are collected in 87 urban areas across the country from about 50,000 housing units and approximately 23,000 retail establishments-department stores, supermarkets, hospitals, filling stations, and other types of stores and service establishments. All taxes directly associated with the purchase and use of items are included in the index. Prices of fuels and a few other items are obtained every month in all 87 locations. Prices of most other commodities and services are collected every month in the three largest geographic areas and every other month in other areas. Prices of most goods and services are obtained by personal visits or telephone calls of the Bureau's trained representatives.

In calculating the index, price changes for the various items in each location are averaged together with weights, which represent their importance in the spending of the appropriate population group. Local data are then combined to obtain a U.S. city average. Separate indexes are also published by size of city, by region of the country, for cross-classifications of regions and population-size classes, and for 26 local areas. Area indexes do not measure differences in the level of prices among cities, they only measure the average change in prices for each area since the base period.

The index measures price change from a designed reference date—1982-84 which equals 100.0. An increase of 16.5 percent, for example, is shown as 116.5. This change can also be expressed in dollars as follows: the price of a base period market basket of goods and services in the CPI has risen from $10 in 1982-84 to $11.65.

For further details visit the CPI home page on the Internet at http://www.bls.gov/cpi/ or contact our CPI Information and Analysis Section on (202) 691-7000.

Calculating Index Changes

Movements of the indexes from one month to another are usually expressed as percent changes rather than changes in index points, because index point changes are affected by the level of the index in relation to its base period while percent changes are not. The example below illustrates the computation of index point and percent changes.

Percent changes for 3-month and 6-month periods are expressed as annual rates and are computed according to the standard formula for compound growth rates. These data indicate what the percent change would be if the current rate were maintained for a 12-month period.

Index Point Change

CPI	115.7
Less previous index	111.2
Equals index point change	4.5

Percent Change

Index point difference	4.5
Divided by the previous index	111.2
Equals	0.040
Results multiplied by one hundred	0.040x100
Equals percent change	4.0

Regions Defined

The states in the four regions shown in Tables 3 and 6 are listed below.

The Northeast--Connecticut, Maine, Massachusetts, New Hampshire, New York, New Jersey, Pennsylvania, Rhode Island, and Vermont.
The Midwest--Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.
The South--Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia, and the District of Columbia.
The West--Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

A Note on Seasonally Adjusted and Unadjusted Data

Because price data are used for different purposes by different groups, the Bureau of Labor Statistics publishes seasonally adjusted as well as unadjusted changes each month.

For analyzing general price trends in the economy, seasonally adjusted changes are usually preferred since they eliminate the effect of changes that normally occur at the same time and in about the same magnitude every year--such as price movements resulting from changing climatic conditions, production cycles, model changeovers, holidays, and sales.

The unadjusted data are of primary interest to consumers concerned about the prices they actually pay. Unadjusted data also are used extensively for escalation purposes. Many collective bargaining contract agreements and pension plans, for example, tie compensation changes to the Consumer Price Index unadjusted for seasonal variation.

Seasonal factors used in computing the seasonally adjusted indexes are derived by the X-12-ARIMA Seasonal Adjustment Method. The updated seasonal data at the end of 1977 replaced data from 1967 through 1977. Subsequent annual updates have replaced 5 years of seasonal data, e.g., data from 1997 through 2001 were replaced at the end of 2001. In January 2002, dependently seasonally adjusted series were revised for January 1987-December 2001 as a result of a change in the aggregation weights for dependently adjusted series. For further information, please see "Aggregation of Dependently Adjusted Seasonally Adjusted Series," in the October 2001 issue of the CPI Detailed Report.

The seasonal movement of all items and 54 other aggregations is derived by combining the seasonal movement of 73 selected components. Each year the seasonal status of every series is reevaluated based upon certain statistical criteria. If any of the 73 components change their seasonal adjustment status from seasonally adjusted to not seasonally adjusted, not seasonally adjusted data will be used for the last 5 years, but the seasonally adjusted indexes will be used before that period. Note: 39 of the 73 components are seasonally adjusted for 2002.

Seasonally adjusted data, including the All items index levels, are subject to revision for up to five years after their original release. For this reason, BLS advises against the use of these data in escalation agreements.

Effective with the calculation of the seasonal factors for 1990, the Bureau of Labor Statistics has used an enhanced seasonal adjustment procedure called Intervention Analysis Seasonal Adjustment for some CPI series. Intervention Analysis Seasonal Adjustment allows for better estimates of seasonally adjusted data. Extreme values and/or sharp movements which might distort the seasonal pattern are estimated and removed from the data prior to calculation of seasonal factors. Beginning with the calculation of seasonal factors for 1996, X-12-ARIMA software was used for Intervention Analysis Seasonal Adjustment.

For the fuel oil, natural gas, motor fuels, and educational books and supplies indexes, this procedure was used to offset the effects that extreme price volatility would otherwise have had on the estimates of seasonally adjusted data for those series. For the Nonalcoholic beverages index, the procedure was used to offset the effects of a large increase in coffee prices due to adverse weather. The procedure was used to account for unusual butter fat supply reductions and decreases in milk supply affecting the Fats and oils series. For the Water and sewerage maintenance index, the procedure was used to account for a data collection anomaly. It was used to offset an increase in summer demand in the Midwest and South for Electricity. For New vehicles, New cars, and New trucks, the procedure was used to offset the effects of a model changeover combined with financing incentives.

A description of Intervention Analysis Seasonal Adjustment, as well as a list of unusual events modeled and seasonal factors for these items may be obtained by writing the Bureau of Labor Statistics, Division of Consumer Prices and Price Indexes, Washington, DC 20212 or by calling Daniel Chow on (202) 691-6968 or sending e-mail to Chow_Dan@BLS.GOV. If you have general questions about the CPI, please call our information staff at (202) 691-7000.